Methods and Results: We included prospectively the 42 consecutive patients (younger than 75 yo) implanted in the University Hospital of Toulouse with ACC/AHA/ESC indications for CRT. Characteristics of the population were: male sex 88%, ischemic cardiomyopathy 45%, mean LVEF 22%, mean QRS duration 160ms, CRT-D 98%. The echocardiographic (Pulsed Doppler and Tissue Doppler Imaging) parameters of cardiac dysynchrony were obtained at baseline and six month (or more) after CRT implant. We defined the responder group as an improvement in 1 NYHA class and no hospitalisation for heart failure (HF) during the follow up (mean duration 15 month). 62% (n=26) were clinical responders. The echocardiographic assessment was done at 11 (6 to 20) month. There was no statistically significant difference between the "residual" mechanical dysynchrony of the responders versus the non-responders. Considering only the responders, there is no reduction of LIVD at six month after CRT. A baseline aortic pre-ejection delay > 140 ms, a non ischemic cardiomyopathy and the left ventricular activation time measured before implantation with a method described recently by Sweeney et al are the only factors of response to CRT.

Conclusions: The clinical response to CRT is not well correlate with the "residual" mechanical LIVD such as we measured by echocardiography (DTI and PD).

194

Cardiac resynchronization therapy in elderly patients

A Rollin-Garderes (1), A Duparc (1), P Mondoly (1), N Combes (2), A Hebrard (1), M Delay (1), Ph Maury (1), Jp Albenque (1), Didier Carrié (1), S Boveda (2)
(1) CHU Rangueil, Cardiovascular and Metabolic Pole, Toulouse, France - (2) Clinique Pasteur, Toulouse, France

Background: Cardiac Resynchronization Therapy (CRT) improves morbidity and mortality in systolic heart failure. Elderly patients are under represented in large clinical trials although incidence of heart failure is high in this population.

Method: we considered 146 consecutive patients 75 years old with standard indication for CRT implanted between 2005 and 2007. Mean age was 79 yo, 72 % males, EF= 27%, ischemic heart disease (IHD) 46%, Atrial Fibrillation 54%, CRT-D: 16%. Minimal follow-up was 12 months. Total mortality, clinical improvement (gain > 1 NYHA class without hospitalization for congestive heart failure) and combined criteria (mortality and clinical improvement) were retrospectively assessed.

Results: Mean follow-up is 25 +/-12 months. Data are complete for 137 patients (94.2%).
Survival rate is 65%, clinical improvement is achieved in 51% and combined criteria in 45%.
Independent factors of non response ($p<0.10$) are summarized in the table.
Causes of deaths are: terminal heart failure: 35 pts, sudden cardiac death: 1 pt, non cardiac death: 13 pts and unknown: 2 pts.

Conclusion: CRT is effective in elderly patients. Factors of non response are similar to those observed in younger population. CRT-P appears to be the most suitable device for this population.

(Voir tableau ci-dessous)

195

Mechanical dyssyncrony and response to cardiac resynchronization therapy in patients with narrow QRS complex.

Caroline Dussault (1), Erwan Donal (2), Patricia Réant (3), Stéphane Lafitte (3), Raymond Roudaut (3), Gilbert Habib (3), Pascal Gueret (1), Pascal Lim (1)
(1) CHU Henri Mondor, Fédération de cardiologie, Créteil, France - (2) CHU Rennes, Rennes, France - (3) CHU Bordeaux, Bordeaux, France

Objective: To assess whether LV mechanical dyssynchrony may be used to predict response to CRT in patients with narrow QRS complex (<120ms). Methods: CRT was performed in 183 symptomatic heart failure patients (64±12 years, EF=25±8%) with narrow (n=41) and wide QRS complex (n=142). Mechanical dyssynchrony before CRT implantation was quantified by the 12 segment standard deviation of peak longitudinal strain by speckle tracking (12SD) and the strain delay index (SDI) defined as the sum of difference between end systolic and peak strain across the 16 segments.

Results: Before CRT, wide and narrow QRS patients had similar 12SD (100±32ms vs. 105±35ms) and SDI (36±14% vs. 38±15%). However, in wide QRS patients, QRS duration decreased after CRT (143±35ms vs. 120±34ms, $p<0.0001$) and ESV reduction (mean= -21%, ESVR>15% in 66%, 92/139) correlated with SDI ($r=0.41$, $p<0.0001$) and 12SD ($r=0.21$, $p=0.01$) before CRT. In contrast, in narrow QRS population, QRS duration increased after CRT (96±16ms vs. 108±28ms, $p=0.006$) and ESV reduction (Mean=-11%, ESVR>15% in 39% (25/41) failed to correlate with mechanical dyssynchrony before CRT. Importantly, increase in QRS duration after CRT in narrow QRS population was associated with adverse remodeling ($r=0.43$, $p=0.01$) and tended to correlate with an increase in SDI after CRT ($r=0.32$, $p=0.08$).

Conclusion: Response to CRT does not correlate to the importance of mechanical dyssynchrony in narrow QRS population. The benefice of CRT despite a significant LV dyssynchrony appears counterbalanced by a significant QRS enlargement after CRT implantation in narrow QRS population.

196

Non response after cardiac resynchronisation therapy is associated with a more severe cardiomyopathy

Laurence Jesel (1), Annie Trinh (2), Aurélie Herrmann (3), Linda Ramseyer (3), Gérald Roul (3), Patrick Ohlmann (1), Olivier Morel (3), Michel Chauvin (3)
(1) Hôpitaux Universitaires de Strasbourg, Strasbourg, France - (2) Hôpitaux Universitaires de Strasbourg, Fédération de Cardiologie, Strasbourg, France - (3) Pôle d'activité médico-chirurgicale cardiovasculaire, NHC, Strasbourg, France

Background: Cardiac resynchronisation therapy (CRT) has been shown to improve clinical status in heart failure patients. Some patients treated by CRT fail to respond to the treatment. Predisposing factors for non-response should be investigated to optimize patient selection.

Objective: The purpose of the study was to evaluate before device implantation and 3, 6 and 12 month after, echocardiographic and biological parameters with respect to CRT response.

Methods: Thirty two patients with heart failure (72% of men ; age 66 ± 10 years; 59 % non-ischaemic cardiomyopathy; NYHA III-IV; left ventricular ejection fraction (LVEF) 22.7 ± 6.7 %; QRS width 146 ± 26 ms) were implanted with CRT device and followed during twelve month. Responders

Multivariate analysis OR (IC 95%)	Combined criteria	Total Mortality	Clinical improvement
NYHA IV	4,1 (1.5-12.4)	3.1 (1.2-8.5)	2.5 (1-6.6)
IHD	2,2 (1-4.8)	3.4 (1.5-7.9)	NS
CRT-D	NS	3.2 (1.2-8.8)	NS
Atrial fibrillation	2,7 (1.3-5.8)	2.2 (1-5.1)	NS
No ACEI /ARB	2,7 (0.9-8.8)	NS	NS
Renal failure (creatinine > 10µm/l)	1,1 (1-1.2)	NS	1.2 (1.1-1.3)
Doses of diuretics	NS	1.03 (1-1.1)	NS

▶